

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

3-5-2021

JOURNAL OF ETHNOPHARMACOLOGY: A BIBLIOMETRIC STUDY

VICTORIA P

Periyar University, victo97riya@gmail.com

PRAKASH M

murugaparakash7@gmail.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

P, VICTORIA and M, PRAKASH, "JOURNAL OF ETHNOPHARMACOLOGY: A BIBLIOMETRIC STUDY" (2021).

Library Philosophy and Practice (e-journal). 5255.

<https://digitalcommons.unl.edu/libphilprac/5255>

JOURNAL OF ETHNOPHARMACOLOGY: A BIBLIOMETRIC STUDY

VICTORIA.P¹

Ph.D. Research Scholar,
DLIS, Periyar University,
Salem – 636011.

Email ID: victo97riya@gmail.com

PRAKASH.M²

Librarian,
Dr.R.V.Arts and Science College,
Karamadai, Coimbatore - 641104.

Email ID: murugaprakash7@gmail.com

Abstract

The purpose of this study was to measure the number of contributions and highlight the contributions made by the researchers in the field “Journal of Ethnopharmacology”. Journal of Ethnopharmacology is a peer reviewed medical journal covering the traditional medicinal use of plants and other substances. Currently published by Elsevier. It publishes Eighteen issues in a year. The study examines the article published in the Journal of Ethnopharmacology from 2016 to 2020. This paper aimed to assess growth pattern of research output, authorship pattern, degree of collaboration, ranking of authors, type of items produced, keyword wise distribution, most productive countries and distributions of research output and also estimate the future growth of publications using straight line equation. There are 3141 articles were published during 2016-2020 (5 years). Data were interpreted by using software such as Histcite, Bibexcel, and VOS viewer and tabulated using MS Excel. The highest number of 856 (27.2%) articles was published in 2020 and lowest number of 454 (14.5%) articles published in 2017. Majority of the contributions are more than ten authors with 445 (14.17%) publications. There exists a higher level of collaborations between the authors. Zhang Y is the most productive author ranked in first position. Most of the research outputs in the journal are articles. ‘In-Vitro’ is the keyword which is mostly occurred in the journal. 1301 articles were published in Peoples R China. It is estimated that research output of the source journal may take slightly increasing future.

Keywords: Ethnopharmacology, Pharmacological, Animals, Microorganisms, Bibliometrics.

1. Introduction

The Journal of Ethnopharmacology is dedicated to the exchange of information and understandings about people's use of plants, fungi, animals, microorganisms and minerals and their biological and pharmacological effects based on the principles established through international conventions.

The Journal of Ethnopharmacology is a peer-reviewed medical journal covering the traditional medicinal use of plants and other substances. It is the official journal of the International Society for Ethnopharmacology. The journal is included in the Index Medicus (MEDLINE).

Cite Score: 6.3

Impact factor: 3.690 (2019)

ISSN: 0378-8741 (print); 1872-7573 (web)

Publisher: Elsevier

Discipline: Ethnomedicine

OCLC number: 04649997

Editor: A.M. Viljoen

2. Review

Andreo-Martínez et al. (2020)¹ in their study explained about a bibliometric analysis based on the Web of Science database was performed on bioavailability of pesticides in vegetables, food or wine related studies published from inception to 2018. A total of 1202 articles were subjected to examination. The results reveal that yearly production of scientific articles increased steadily. Journal and institution production, and author's keywords frequencies followed the Lotka's Law. Khan SU and White JC were the most productive authors. The most productive journals were Journal of Agricultural and Food Chemistry (55), and Journal of Ethnopharmacology (48), and the most common WOS subject category was Pharmacology & Pharmacy (419). USA (h-index of 40) produced 21.7 % of all articles, closely followed by China (20.6 %). Chinese Academy of Sciences (34) was the most productive research institutions. Finally, current and future trends in

this area should focus on keywords such as pharmacokinetics, curcumin, in-vitro, nanoparticles, oral (bioavailability) and cell.

Viljoen, A., Sandasi, M., & Vermaak, I. (2019)² have analyzed the South Africa's unique flora and extensive use of African traditional medicines has created a unique research opportunity on medicinal plants for local and international scientists. In this paper, submitted to a special issue of South African Journal of Botany (SAJB) dedicated to “sub-Saharan Ethnobotany”, this paper aim to explore the research landscape on medicinal plant research as published in SAJB. A bibliometric assessment (1982–2017) showed that medicinal plant research represents 24% of the published volume in SAJB and that contributions on this topic are increasing exponentially. Although most papers are broad-based *in vitro* screening studies, the range of topics covered is impressive. Antimicrobial (41%) and anti-oxidant (21%) studies dominate the research space with fewer studies focusing on diseases highly relevant to the African continent, e.g. malaria (3%) and tuberculosis (2%). The citation footprint and authorship networks which have been established attest the pivotal role the SAJB has played to build research capacity and create awareness in this important field of research.

Yao, H. et al. (2018)³ in this article aims to present the research trends in global intestinal microbiota studies within the domain of obesity research. Bibliographic information of the publications on intestinal microbiota and obesity was retrieved from the Scopus database, and then analyzed by using bibliometric approaches. A total of 3,446 references were retrieved; the data indicated a steady growth and an exponential increase in publication numbers. The references were written in 23 different languages (93.8% in English). A number of 3,056 English journal papers were included in the further analyses. Among the 940 journals, the most prolific ones were PLOS ONE, Scientific Reports, and British Journal of Nutrition. North America and Europe were the highest publication output areas. The US (995 publications) ranked first in the number of publications, followed by the China (243 publications) and France (242 publications). The publication numbers were significantly correlated with gross domestic product (GDP), human development index (HDI), and population number (PN). International collaboration analysis also shows that most of the collaborations are among developed countries.

Şenel, E., & Demir, E. (2018)⁴ has described Apitherapy is the medical use and the application of honey bee products and in recent years there has been a growing interest in studies of this field. They aimed to perform a bibliometric study in the apitherapy literature. They used Web of Science database. In this study retrieved a total of 6917 documents of which great majority (82.4%) was original articles. Brazil was found to ranked first on the publication number with 889 papers followed by the USA, China, Japan and Turkey. They measured a productivity score for each country and the most productive countries in apitherapy field were Switzerland (2.978), Croatia (2.074), and Bulgaria (1.840). Propolis was the most used keyword followed by bee venom, flavonoids, apis mellifera and apoptosis. A moderate correlation was detected between number of publications and GDP. To the best of our knowledge our study was the first in this area and we proposed that further studies should be supported in this field.

Sa'ed, H. et al. (2015)⁵ have analyzed the results of Bibliometric analysis is increasingly employed as a useful tool to assess the quantity and quality of research performance. The specific goal of the current study was to evaluate the performance of research output originating from Arab world and published in international Integrative and Complementary Medicine (ICM) journals. Original scientific publications and reviews from the 22 Arab countries that were published in 22 international peer-reviewed ICM journals during all previous years up to December 31st 2013, were screened using the Web of Science databases. Five hundred and ninety-one documents were retrieved from 19 ICM journals. The h-index of the set of papers under study was 47. The highest h-index was 27 for Morocco, 21 for Jordan, followed by 19 for each Kingdom of Saudi Arabia, and Egypt, and the lowest h-index was 1 for each of Comoros, Qatar, and Syrian Arab Republic. No data related to ICM were published from Djibouti, and Mauritania. After adjusting for economy and population power, Somalia (89), Morocco (32.5), Egypt (31.1), Yemen (21.4), and Palestine (21.2) had the highest research productivity. The total number of citations was 9,466, with an average citation of 16 per document. The study identified 262 (44.3 %) documents with 39 countries in Arab-foreign country collaborations. Arab authors collaborated most with countries in Europe (24.2 %), followed by countries in the Asia-Pacific region (9.8 %).

Nwagwu, W. E., & Ojemeni, O. (2015)⁶ described the bibliometric characteristics of 32 biomedical open access journals published by Academic Journals and International Research Journals – the two Nigerian publishers in Jeffery Beall's list of 23 predatory open access

publishers in 2012. Data about the journals and the authors of their articles were collected from Google Scholar and Web of Science. As at December 2012, the journals had together produced a total of 5,601 papers written by 5,599 authors, and received 12,596 citations. Authors from Asia accounted for 56.79% of the publications; those from Africa wrote 28.35% while Europe contributed 7.78%. Authors from Africa accounted for 18.25% of the citations these journals received, and this is about one-third the number of citations by authors in Asia (54.62%). At country level, India ranks first in the top 10 citer countries, while Nigeria, the host country of the journals, ranked eighth.

Nagarkar, S., Veer, C., & Kumbhar, R. (2015)⁷ analyzed research productivity of life sciences faculty members at the Savitribai Phule Pune University (SPPU), Maharashtra, India. The research is conducted with the intention to know the research productivity over 15 years (1999-2013), the citations received, collaborations, and authorship patterns. Web of Science (WoS) database was used for the bibliographic and citation data. Data were analysed by using bibliometric techniques and software such as HistCite, Intcoll, and Pajek. Results show that the research productivity of faculty members is increasing, their publications are getting good citations and thereby their journals have better Impact Factor. The faculty members have collaborated with prominent international researchers and have extended interdisciplinary research. The paper is based on empirical data exclusively gathered for this research.

3. Methodology

The present study aims to analyze the research publications of the 'Journal of Ethnopharmacology'. The required data for the present study has been retrieved from Web of Science core collection published by Clarivate Analytics. The basic search strategy has been used for collecting data about the publications of Journal of Ethnopharmacology: **Publication Name** = Journal of Ethnopharmacology **Year** = 2016-2020. **Publisher:** Elsevier. A total of 90 volumes of 90 issues of 3141 publications have been taken up for the study period. The facts of 'Journal of Ethnopharmacology' published articles such as publications year, the number of authors, the name of authors, geographical affiliation, and the types of documents etc., were recorded and analyzed by using the Histcite, Bibexcel and VOS viewer software.

3.1 Objectives

- To identify the growth of research productivity on Journal of Ethnopharmacology research from 2016 to 2020.
- To identify the document type wise Distribution of publications with Citation.
- To determine the authorship pattern and the nature of collaboration and co-authorship pattern and determine the degree of collaboration in Journal of Ethnopharmacology research.
- To identify the authors wise.
- Ranking of the Zipf's law of keyword occurrence.
- Ranking of contributed authors and countries.

4. Data Analysis

Table 4.1 Year Wise Output

S.No	Publication Year	Records	Percent	TLCS	TGCS
1	2016	699	22.3	743	10977
2	2017	454	14.5	387	5671
3	2018	518	16.5	401	5267
4	2019	614	19.5	138	3039
5	2020	856	27.2	0	1739

To analyze the year wise publications of research on Journal of Ethnopharmacology. The highest numbers of publications is 856 in 2020 with 0 Local citation score and 1739 Global Citation score, and followed by 699 papers in 2016 with 743 Local Citation Score and 10977 Global Citation Scores. 614 papers in 2019 with 138 Local Citation Score and 3039 Global Citation Score. 518 papers in 2018 with 401 Local Citation Score and 5267 Global Citation Score. The least number of publications in the year 2017 with only 454 records and 387 Local Citation Score and 5671 Global Citation Score.

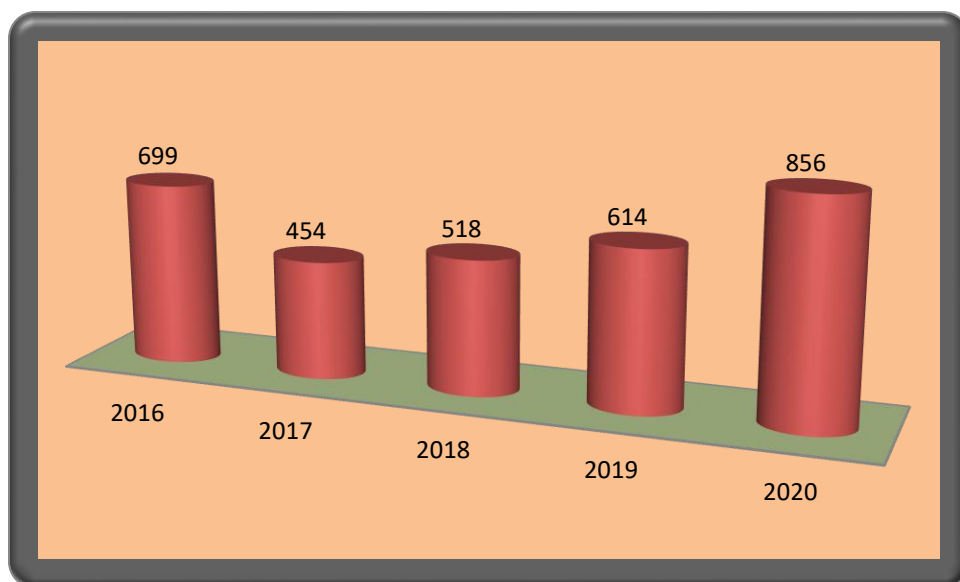


Figure 1 Year Wise output on Journal of Ethnopharmacology

Table 4.2 Annual Growth and Citations

S.No	Year	Vol.No	No.of Issues	Records	Cumulative number of Records	%	No.of Citations	H-index	Average Citation per item
1	2016	177-194	18	699	-	22.3	10976	37	15.7
2	2017	195-209	18	454	1153	14.5	5671	29	12.49
3	2018	210-227	18	518	1671	16.5	5267	26	10.17
4	2019	228-245	18	614	2285	19.5	3039	14	4.95
5	2020	246-263	18	856	3141	27.2	1739	10	2.03
Total				3141		100	26692	43	8.5

The table 4.2 shows the distribution citation in Research Literature in Journal of Ethnopharmacology during the study period 2016-2020 contained 26692 citations and 43 h-index in 3141 articles and each article has an average of 8.5 citations.

Table 4.3 Exponential Growth Rate

S.No	Year	Pulication	EGR B= yt1 / yt0
1	2016	699	-
2	2017	454	0.65
3	2018	518	1.14
4	2019	614	1.18
5	2020	856	1.39
Total		3141	

Table 4.3 reveals the exponential growth rate of overall global publications on Journal of Ethnopharmacology during the study period (2016 to 2020). An exponential growth rate in number of global publications on Journal of Ethnopharmacology was observed during the period of 5 years. The highest growth rate of 1.39 was found during the year 2020 with 856 publications. The average annual exponential growth rate for the period of study is 0.87 and this is found in the above table. It is found from the year wise publications analysis that the growth rate is approximately in equal level with slight changes in the world wide research output of Journal of Ethnopharmacology.

Table 4.4 Relative growth Rate & Doubling Time

Year	No. of Records	Cumulative Total	Log _e W1	Log _e W2	RGR=W2-W1	Mean Relative Growth(R)	DT=0.693/R	Mean DT
2016	699	-	6.54	-	-	0.94	-	0.47
2017	454	1153	6.11	7.05	0.94		0.73	
2018	518	1671	6.24	7.42	1.18		0.58	
2019	614	2285	6.42	7.72	1.30		0.53	

2020	856	3141	6.75	8.05	1.30		0.53	
Total	3141					0.94		0.47

It is observed from the table 4.4 that the relative growth rate of Journal of Ethnopharmacology have consistently increased from 0.94 in 2017 to 1.30 in 2020. The mean relative growth rate has declined from 0.94 for the period 2016 – 2020. The doubling time of annual research articles in Journal of Ethnopharmacology shows an idecreasing trend from 0.73 years in 2017 to 0.53 years in 2020. The mean doubling time for research articles in Journal of Ethnopharmacology has decreased from 0.73 years for the period 2017 to 0.53 years for the period 2020 with an average doubling time of 0.47 years for the period as a whole.

Table 4.5 Year Wise Authorship Pattern

Authorship Pattern	2016	2017	2018	2019	2020	TOTAL
One Authors	6	4	4	6	6	26
Two Authors	32	26	20	18	33	129
Three Authors	51	28	36	41	42	198
Four Authors	62	52	45	61	71	291
Five Authors	93	51	49	77	88	358
Six Authors	87	58	65	65	75	350
Seven Authors	92	50	71	71	110	394
Eight Authors	80	49	64	79	123	395
Nine Authors	64	45	52	65	95	321
Ten Authors	50	33	42	42	67	234
Above Ten Authors	82	58	70	89	146	445

In Journal of Ethnopharmacology the Authorship pattern – year wise has been analyzed is shown in Table 4.5. In Table 4.5 reveals that the Authorship Pattern in Year wise Distribution of articles publications in the research literature of the total 5 years, the above authors scored in the first place they have contribute 445 counts. The second and third place scored for eight and

seven authors in each 395 and 394 counts. The five and six authors scored fourth and fifth place in each 358 and 350 counts.

Table 4.6 Co-Authorship Index

Authorship Pattern	2016		2017		2018		2019		2020		TOTAL
	NO	CAI	NO	CAI	NO	CAI	NO	CAI	NO	CAI	
One Authors	6	103	4	106	4	93	6	118	6	84	26
Two Authors	32	111	26	139	20	93	18	71	33	93	129
Three Authors	51	115	28	97	36	110	41	105	42	77	198
Four Authors	62	95	52	123	45	93	61	107	71	89	291
Five Authors	93	116	51	98	49	82	77	110	88	90	358
Six Authors	87	111	58	114	65	112	65	95	75	78	350
Seven Authors	92	104	50	87	71	109	71	92	110	102	394
Eight Authors	80	91	49	85	64	98	79	102	123	114	395
Nine Authors	64	89	45	96	52	98	65	103	95	108	321
Ten Authors	50	96	33	97	42	108	42	91	67	105	234
Above Ten Authors	82	82	58	90	70	95	89	102	146	120	445
Total	699		454		518		614		856		3141

It is observed from Table 4.6 that the value of CAI for two authored papers during 2016-2020 were the highest (139). Similarly, for above ten authored papers, during 2016-2020, the CAI was 120. The CAI for multi authored papers was lowest (71) period from 2016 to 2020. This indicates that the team work in research is in increasing trend.

In order to find out how the pattern of co-authors has changed during 1908 to 2010, the formula of Co Authorship Index (CAI) suggested by Garg and Padhi³⁰ has been used. For calculating CAI the entire data set was divided into four blocks.

$$CAI = \frac{N_{ij}/N_{io}}{N_{oj}/N_{oo}} = \frac{6/26}{699/3141} = \frac{0.2307}{0.2225} = 103$$

N_{ij} : Number of papers having j authors in block I;

Nio : Total output of block I;

Noj : number of papers having j authors for all blocks; Noo : total number of papers for all authors and all blocks;

CAI = 100 implies that co-authorship in a particular block for a particular types of authorship corresponds to the world average, CAI > 100 reflects higher than average co authorship effort and CAI < 100 lower than average co authorship effort in a particular block for a particular type of authorship.

Table 4.7 Authorship Pattern

S.No	Authorship Pattern	Publication	Percentage
1	One Authors	26	0.83
2	Two Authors	129	4.11
3	Three Authors	198	6.30
4	Four Authors	291	9.26
5	Five Authors	358	11.40
6	Six Authors	350	11.14
7	Seven Authors	394	12.54
8	Eight Authors	395	12.58
9	Nine Authors	321	10.22
10	Ten Authors	234	7.45
11	Above Ten Authors	445	14.17

Table 4.7 mentioned the authorship pattern of contributions. Out of 3141 articles, a single author has contributed 0.83 (26)%, 4.11% of articles were published with two authors (129), 6.30% of articles were published by three authors (198), 9.26% of the contributions were published by four authors (291), 11.40% of the contributions were published by five authors (358), 11.14% of the contributions were published by six authors (350), 12.54% of articles were produced by seven authors (394), 12.58% of articles were from eight authors (395), 10.22% of articles were contributed by nine authors (321), 7.45% of articles were published from ten

authors (234) and 14.17% of articles were published from more than ten authors (445) respectively.

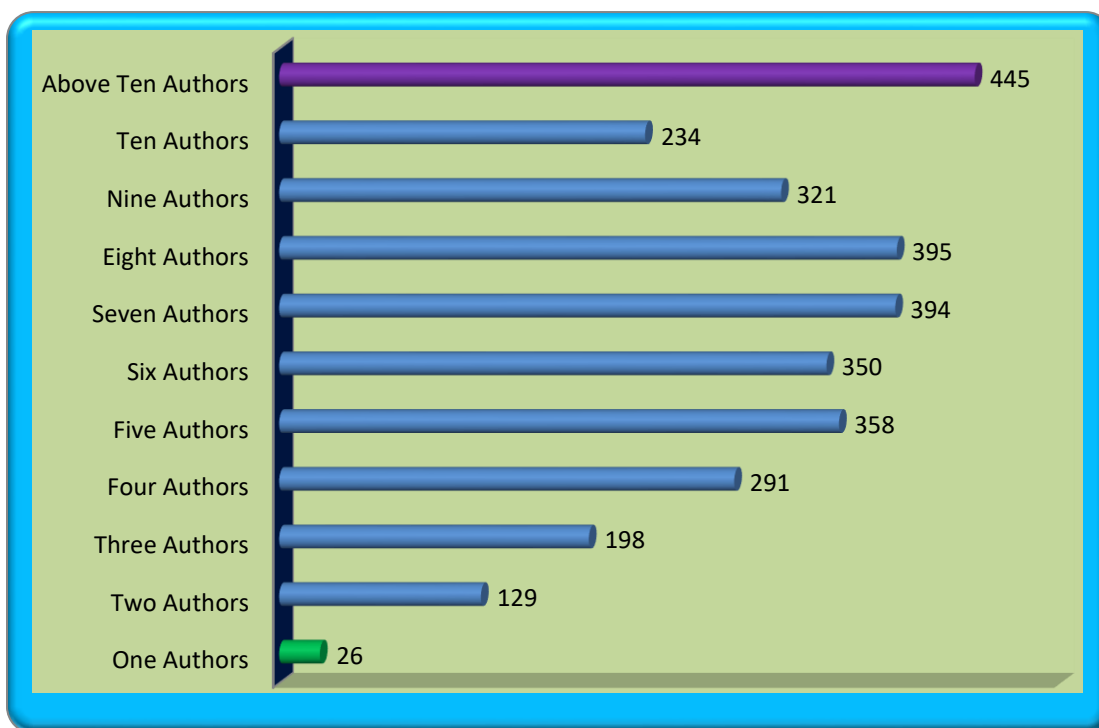


Figure 2 Authorship Pattern

Table 4.8 Single Author versus Multi Authors

S.No	Authorship Pattern	Publications	Percentage
1	Single Author	26	0.83
2	Multi Authors	3115	99.17
Total		3141	

It is found from the study that multiple authors' contribution is 99.17% (3115) in Journal of Ethnopharmacology research and the remaining 0.83% (26) publications by single author.

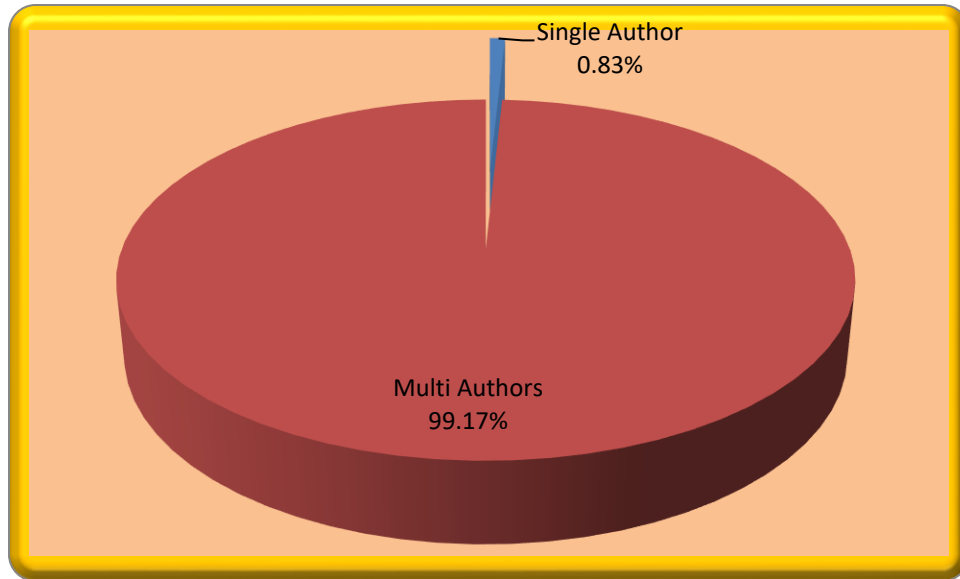


Figure 3 Single Authors versus Multi Authors

Table 4.9 Degree of Collaboration

Year	Single Author (NS)	Multi Authors (NM)	Total (NS + NM)	Degree of Collaboration (DC)
2016	6	693	699	0.99
2017	4	450	454	0.99
2018	4	514	518	0.99
2019	6	608	614	0.99
2020	6	850	856	0.99
Total	26	3115	3141	0.99

The author's degree of collaboration is one of the yard stick to measure the productivity of authors. It is defined as the number of multi author publications in the discipline published during the period of year as against the total number of papers. (Multi author and the single author) published during a year .Subramanian's formula for calculating in the degree of collaboration is followed.

$$DC = NM / NM + NS$$

Here,

NM = Number of multiple authors = 3115 NS = Number of Single authors = 26

DC = $3115/3115+26$

DC = $3115/3141 = 0.99$

In this period the mean degree of collaboration is more than the degree of collaboration (0.99) for the whole period of study.

Table 4.10 Document Type

Type of Documents	Citation sum within h-core	All citations	All articles	h-index
Review	2042	4649	327	36
Article	1667	22008	2781	36
Editorial Material	19	25	9	2
Correction	4	6	20	1
Letter	5	5	3	1
Retraction	0	0	1	0
Total	3737	26693	3141	76

Table 4.10 reveals that number of items published has been the items, Articles 2781 are well ahead of all other types of articles followed by Review 327, Correction 20 and Editorial Material 9, Letter 3, and Retraction 1. The Citation for article 22008 citations and 36 h-index, followed by Review 4649 citations and 36 h-index, Editorial Material 25 citations and 2 h-index, Correction 6 citations and 1 h-index, Letter 5 citations and 1 h-index, and Retraction 0 citations and 0 h-index. It is inferred that the total 3141 articles having scored 26693 citations and 76 h-index.

Table 4.11 Keyword wise Distribution (Top 15 Only)

S.No	Keywords	Records	S.No	Keywords	Records
1	In-Vitro	355	9	CELLS	219
2	Extract	323	10	Antioxidant	216
3	Expression	286	11	Mechanisms	201
4	Oxidative Stress	265	12	Apoptosis	181
5	Medicinal-Plants	256	13	Mice	170
6	Inhibition	232	14	Rats	154
7	Activation	222	15	Nf-Kappa-B	153
8	Inflammation	221			

The occurrence of the word “In-Vitro” in the database of Web of Science on searching “Journal of Ethnopharmacology” was occurred in 355 times and in the first position, “Extract” was occurred in 323 times and ranked in the second position, other keywords are occurred below three hundred times and ranked in respectively.

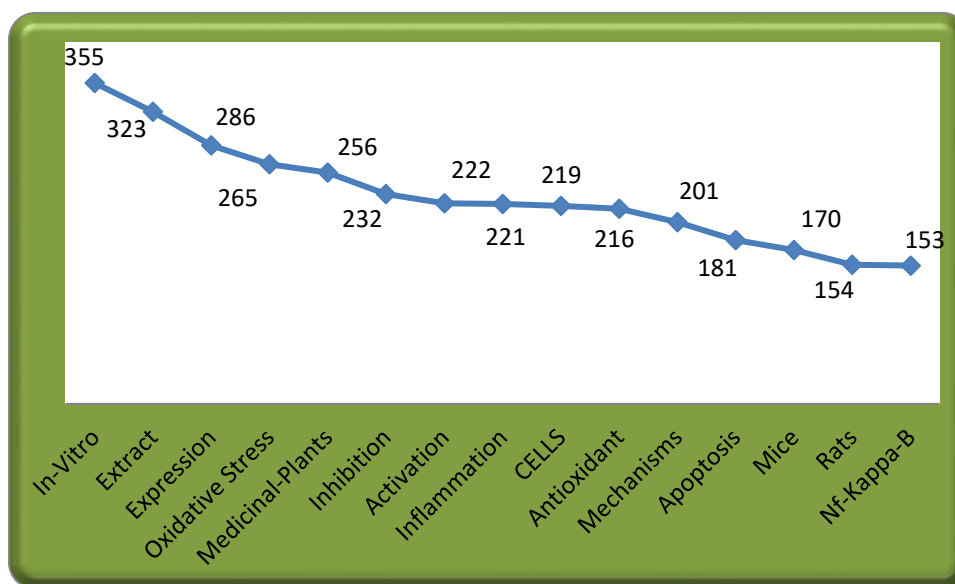


Figure 4 Occurrence of Keyword

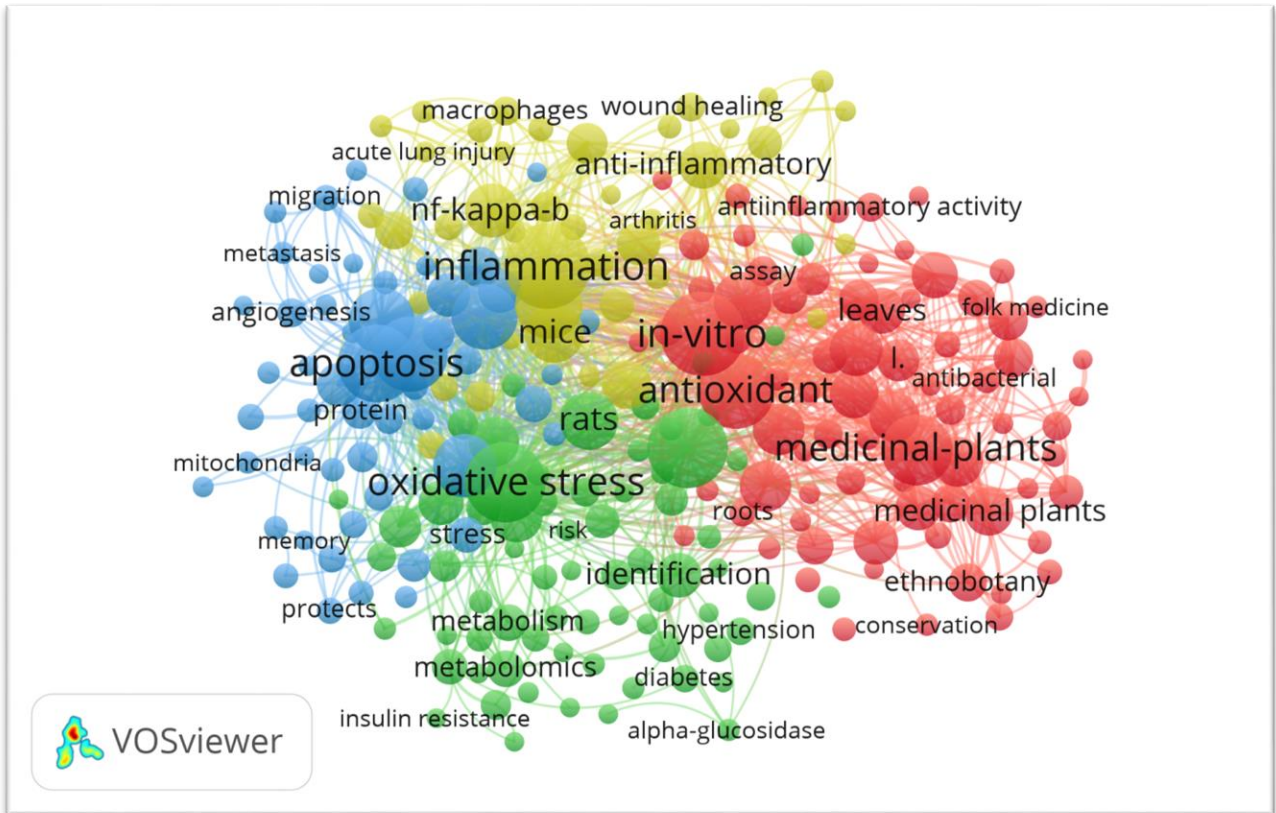


Figure 5 Visualization map of Co occurrence Keyword

Table 4.12 Most Prolific Authors (Top 15 Only)

S.No	Authors	Records	S.No	Authors	Records
1	Zhang Y	47	9	Zhang J	25
2	Zhang L	43	10	Zhang Q	25
3	Wang Y	36	11	Liu J	23
4	Wang J	30	12	Chen L	23
5	Li J	30	13	Liu Y	23
6	Wang L	29	14	Wang Q	23
7	Chen Y	28	15	Li X	22
8	Li Y	27			

Table 4.12 indicates the most prolific authors based on publications. The author “Zhang Y” has occupies the First rank with 47 publications. Followed by Zhang L with 43 publications, Wang Y H with 36 articles, Wang J and Li J with 30 articles. The remaining Authors have contributed less than 30 Publications.

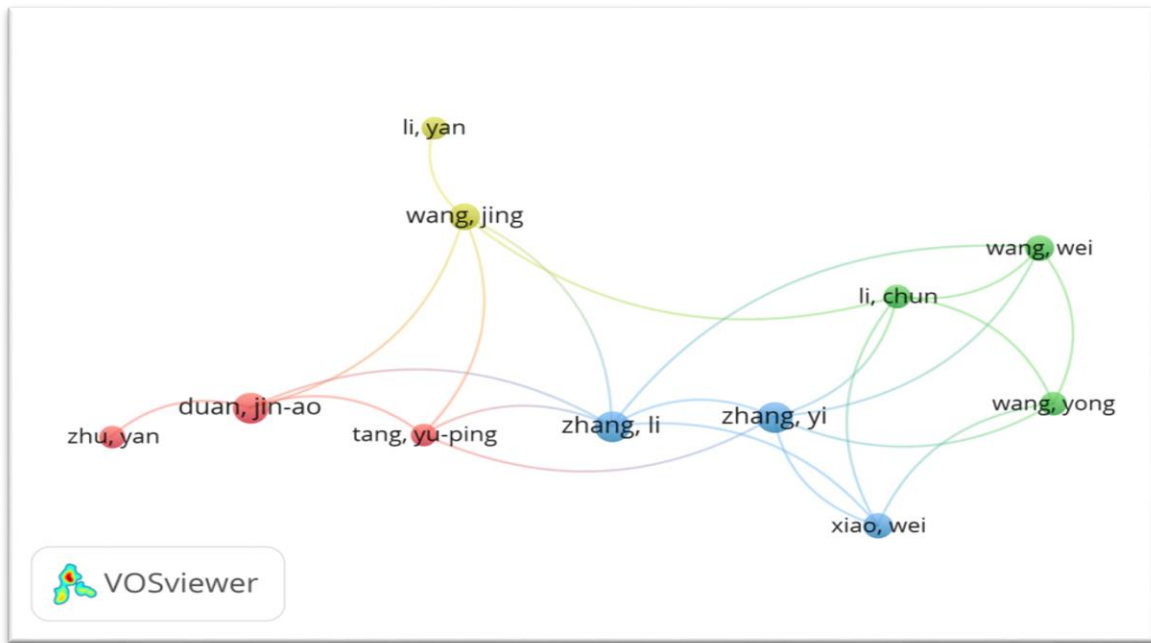


Figure 6 Visualization map of Co Authorship Authors

Table 4.13 Top Ranked Countries (Top 15 Only)

S.No	Countries	Records	S.No	Countries	Records
1	Peoples R China	1301	9	Nigeria	86
2	Brazil	301	10	Germany	82
3	South Korea	249	11	Mexico	72
4	India	248	12	Iran	71
5	USA	192	13	Malaysia	66
6	South Africa	100	14	Italy	59
7	Taiwan	94	15	Australia	56
8	UK	87			

In the case of 24 Asian countries the top position has been occupied by Peoples R China with 1301 records on the performance of Journal of Ethnopharmacology output proving its strong environmental awareness among them all and this as followed by other countries, where Brazil stands in the second position with 301 records, South Korea stands in the third position with 249 records, India 248 records, USA 192 records, South Africa 100 records. It is also found from the table that the countries Taiwan, UK, Nigeria, Germany, Mexico, Iran, Malaysia, Italy and Australia are identified that they were establishing least performance output in the selected field.

Table 4.14 Time series Analysis

Year	No. of Publications(y)	X	X ²	XY
2016	699	-2	4	-1398
2017	454	-1	1	-454
2018	518	0	0	0
2019	614	1	1	614
2020	856	2	4	1712
Total	3141	0	10	474

Straight line equation:

$$Y_c = a + bX$$

Since $\sum X = 0$

$$a = \frac{\sum Y}{N} = \frac{3141}{5} = 628.2$$

$$b = \frac{\sum xy}{\sum x^2} = \frac{474}{10} = 47.4$$

Estimated literature in 2030 is when $X = 2030 - 2020 = 10$

$$= 628.2 + 47.4 * 10 = 1102.2$$

Estimated literature in 2035 is when $X = 2035 - 2020 = 15$

$$= 628.2 + 47.4 * 15 = 1339.2$$

The calculated value of literature out of Journal of Ethnopharmacology for the year 2030 is 1102.2 and output for the year 2035 is 1339.2. With the application of the formula, the time series analysis calculated from the results for the year 2030 and 2035, it is found that the future of Journal of Ethnopharmacology research output may take slightly increasing for forthcoming years. The expectation from the calculations proved there is positive growth in research output of Journal of Ethnopharmacology.

5. Findings and Conclusion

The yearly distribution of articles published on Journal of Ethnopharmacology research output in Asian Countries during 2016 - 2020 (5 years). A total of 3141 publications were published. The highest number of publications 856 (27.2%) was published in the year 2020.

It is found that the average exponential growth rate is 0.87 during the period.

The Relative Growth Rate and Doubling Time of total publications show increasing and decreasing trend. The mean relative growth rate for the period of 2016 – 2020 is 0.94. The mean doubling time for the period of 2016 - 2020 is 0.47 which increased gradually.

The authorship pattern indicates the maximum number of papers was published by collaborative work of more than ten authors 445. The lowest by a group of one authors which amounts to 26.

The Degree of Collaboration ranges from 0.99 to 0.99 during the period of the study. The mean value is 0.99 indicate the high ratio of collaborative research work undertaken by researchers.

The source wise documents of distribution on Journal of Ethnopharmacology research output during the study period were in the form of journal articles i.e. 2781 publications with 22008 citation and 36 h-index were covered by Journal Articles.

The most common keyword used by researcher is “In-Vitro” i.e. used in 355 records.

The study reveals that the Zhang Y is the most productive author with 47 of total records.

The Geographical distribution of productivity, we have into top 15 countries during 2016 - 2020. It shows that “Peoples R China” has contributed 1301 publications and ranked top among the countries in terms of publications.

The distribution of Journal of Ethnopharmacology by language shows scholarly communication used is English language. All the articles are published in the English language.

Most (99.17%) of the total contributions represent the collaborative research. The degree of collaboration has been arrived at 0.99 during the study period. The value of Co Authorship Index (CAI) for two authored paper shows a declining trend from 2016-2020. On the other hand, for multi authored papers the Co Authorship Index reveals an increasing trend.

References

- Andreo-Martínez, P., Ortiz-Martínez, V. M., García-Martínez, N., López, P. P., Quesada-Medina, J., Cámara, M. Á., & Oliva, J. (2020). A descriptive bibliometric study on bioavailability of pesticides in vegetables, food or wine research (1976–2018). *Environmental toxicology and pharmacology*, 77, 103374.
- Viljoen, A., Sandasi, M., & Vermaak, I. (2019). The role of the South African Journal of Botany as a vehicle to promote medicinal plant research—A bibliometric appraisal. *South African Journal of Botany*, 122, 3-10.
- Yao, H., Wan, J. Y., Wang, C. Z., Li, L., Wang, J., Li, Y., ... & Yuan, C. S. (2018). Bibliometric analysis of research on the role of intestinal microbiota in obesity. *PeerJ*, 6, e5091.
- Şenel, E., & Demir, E. (2018). Bibliometric analysis of apitherapy in complementary medicine literature between 1980 and 2016. *Complementary therapies in clinical practice*, 31, 47-52.
- Sa'ed, H. Z., Al-Jabi, S. W., & Sweileh, W. M. (2015). Scientific publications from Arab world in leading journals of Integrative and Complementary Medicine: a bibliometric analysis. *BMC complementary and alternative medicine*, 15(1), 1-10.
- Nwagwu, W. E., & Ojemeni, O. (2015). Penetration of Nigerian predatory biomedical open access journals 2007–2012: A bibliometric study. *Learned Publishing*, 28(1), 23-34.
- Nagarkar, S., Veer, C., & Kumbhar, R. (2015). Bibliometric Analysis of Papers Published by Faculty of Life Science Departments of Savitribai Phule Pune University during 1999-2013. *DESIDOC Journal of Library & Information Technology*, 35(5).
- Garcia-Garcia, P., Lopez-Munoz, F., Rubio, G., Martin-Agueda, B., & Alamo, C. (2008). Phytotherapy and psychiatry: bibliometric study of the scientific literature from the last 20 years. *Phytomedicine*, 15(8), 566-576.
- https://en.wikipedia.org/wiki/Journal_of_Ethnopharmacology